

Andover's First "Net Producer".

By Dan Leary

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When Girish Rao returned home from work this Monday he was enthusiastically greeted by his lovely daughter Anisha and wife Denise just like every day. Anisha is a bright young 2nd grader in Andover who asked more questions about the solar array that we installed at the Rao's home last December than the homeowners themselves. On this particular August evening, Girish had a hunch that a long-awaited moment had arrived. This year Girish had become an expert in tracking solar irradiation, and he knew that at any moment he was about to start a new club in the Merrimack Valley, the "Net Producers".

I first met Girish, Denise and Anisha at the Green Building Tour Day at Smolak Farms last October. It is essentially a road rally for solar homes, wind turbines, and other green infrastructure that is sponsored every year by the North East Sustainable Energy Association. Jason, my lead solar installer, and I were hosting a "How To" demonstration on solar technology and we captured the interest of the Raos. Just a few weeks later we met at their home on Highland Ave in Andover to conduct a site assessment to determine if solar would work for them. We quickly calculated that while the site wasn't perfect, it would still produce around 85% of full power under the most ideal conditions.



About forty-five days from that moment we were completing the inspections on Andover's first grid-connected solar electric array. And they didn't stop at electricity, also integrating several solar collectors to make almost 70% of their annual hot water needs. I remember the town's electrical inspector, Paul Kennedy, looking over the system with tremendous excitement. Paul leads some of the training for many of the state's inspectors and has been

pushing for more education in solar generators. While new technologies like solar all too often incite resistance in permitting, Andover is one of the many towns in the area that I observe embracing positive change.

I was preparing for a solar unveiling ceremony the following day in Ipswich when I received the voicemail from Girish, "Dan...well, it happened. I came home from work

today and the meter read 99,996.” When a Net Meter is installed, it initially reads “00000”. The Rao’s meter began during the low-light levels of the winter initially turning forward, counting the home’s “net” energy usage, though the solar energy during the summer months has been slowly turning the meter backwards beyond its original starting point. He was thrilled, though probably wondering in the back of his mind if the next electric bill would be about \$16,000. (I wonder what number you dial on National Grid’s automated phone directory for that call!) Girish had expected this day for quite some time, and he and his family have been preparing by taking an electricity diet. While the solar array was modeled to produce around 3,000 kilowatt-hours of electricity per year, their usage had to be whittled down in order to even come close to net zero annual consumption.

And they did. Over the last eight months the Raos have reduced their electric use by more than half averaging merely 250 kilowatt-hours per month. On the evening that I wrote this article I received another email from Girish stating that he’d just made his second full Megawatt-hour of solar electricity.

So, now you see the remarkable story about a typical family in Andover that truly understood that leadership and change start at home. Nine months after the installation of their system and they have become not only Andover’s first (but not the only) solar array, but also Andover’s first carbon-free, oil-free, smoke-stack-free power plant. The Raos didn’t ask us to install the system so that they could save money on their electric bill (though they will). Girish, a computer programmer born in India, drives a beat-up Toyota pick-up truck that’s so old it might have to be carbon-dated. For the same price of a solar array he could have purchased a newer car. And that’s the point.



Anisha, Denise, and Girish, congratulations for being the Merrimack Valley’s first net producer. I hope you join the NESEA Green Building Tour this October and inspire more Net Producers!